A Guide to Conducting a Traditional Knowledge and Land Use Study

T. Garvin, S. Nelson,
E. Ellehoj, and B. Redmond

Canadian Forest Service
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And of course we acknowledge all the elders, interviewed by the people just mentioned and ourselves, who with humour or a solid statement of their view, let us know how a traditional knowledge and land use study may be done successfully.

The authors also acknowledge the people in the petroleum resources and forest products industry, as well as the Province of Alberta for their support and contributions of constructive information as members of a Project Advisory Committee. During the course of these studies, we particularly acknowledge the interest and support of Joseph De Franceschi and Lorne West at the Canadian Forest Service, through which this document will be published.

Authors' Note

For centuries, indigenous cultures have depended exclusively on hunting, fishing, and gathering to sustain themselves. How they did this depended on the resources of the land and the traditions of the people. Each tribe had its own traditions, customs, and language that provided the individuals with a cultural and tribal identity. These traditions and customs were passed down orally and through experience, from one generation to the next.

The elders living today are some of the last people who have lived most of the elements of their original cultures for some or all of their lifetime. They may have also retained most of the traditional knowledge passed on to them by their parents and community.

As recently as the middle of the 20th century, there was land still occupied and used exclusively by aboriginal people. Much of this traditional territory is now being used or is now owned by other people for a number of different purposes, including ranching, farming, parks, oil and gas activities, mining, timber and grazing leases, parks, and transportation.

In the last 10 to 20 years, there has been a significant increase in the various types and extent of these land uses, all of which limit the cultural use of the land by aboriginal people and their ability to sustain their lifestyle. And as a result, many young people have not had an opportunity to learn or practice their culture.

Aboriginal communities in Canada and abroad have completed various types of traditional knowledge and land use studies as part of their efforts to protect many of

their traditional sites for future generations. These studies have identified land used for hunting, fishing, trapping, plants, burial sites, and sacred areas.

In some cases, researchers from outside the community have come in and collected the information. In others, a community has hired a consultant to assist them, and sometimes the community has completed the study themselves. Your community may be one of many now exploring the possibility of doing a study. Although there are some excellent documents that outline different processes for gathering this type of information, there has not been a comprehensive and practical guide for first nations and aboriginal communities who wish to understand what is involved in doing a study.

This book was written to be such a "how-to" guide. We have documented our own experience, as well as the expertise of organizations and communities who have completed these types of studies.

We referred to the use of a Global Positioning System (GPS) for collecting data, and a Geographic Information System (GIS) to access and manage traditional knowledge and land use data, as we have found these to be a very useful tools. With this information, we hope communities can coordinate their studies with limited assistance from outside sources, and in this way build the skills within their community.

We also hope that this document will be an additional resource for ongoing research and other processes, as well as adding to the existing information in this field. As the traditional knowledge and land use studies themselves are, this guide can be a living document, one that can be changed and improved on over time.

—Terry Garvin, Shirley Nelson, Erik Ellehoj, and Barbara Redmond

Contents

1. Deciding to Do a Traditional Knowledge and Land Use Study 1
What is Traditional Knowledge? 1
Why do a Traditional Land Use Study? 1

2. Learning from Others 3
Web Sites Related to Traditional Knowledge and Land Use 4
Reading About Traditional Knowledge and Land Use 5

3. Getting the Community Involved 6
Getting Started 6
Identifying a Traditional Land Use Area 7
Choosing a Community Coordinator 10
Choosing a Consultant 10

4. Terms of Reference 11
Purpose and Objectives 11
Your Budget 12
Administering Project Funds 13

5. Collecting Stories and Making Maps 15
Who Does the Work? 15

6. The Interview Process 18
Selecting Community Interviewers 18
Who Should be Interviewed? 19
Supplies 19
Setting up the Interviews 20
How to Interview 20
Questions to Ask 21
Recording the Interview 31
Rewarding Participation 31

7. The Mapping Process 32
Map Production 32
Map Scale 33
Base Data 33
Mapping Strategies 34
Automated or Manual? 34

8. Validating Traditional Land Use Sites 35
Community Mapping Sessions 35
Field Checking 35

9. Managing Your Information 38
Publishing Options 38
Intellectual Property Rights 38
Winding up the Project 39

10. Putting Your Data to Work 40
Land Issues 40
Educational Uses 40
Other Applications 41
Access to Traditional Data by Partners 41

11. Conclusion 42

Appendix: Aseniwuche Winewak Nation TLUS Terms of Reference . . .43

List of Figures

Figure 1. Timeline for Planning and Management of a Traditional Knowledge and Land Use Study 8

Figure 2. Example of Traditional Territory or Lands 9

Figure 3. Overview of a Traditional Knowledge and Land Use Project 14

Figure 4. GPS Comment Record 36

Disclaimer

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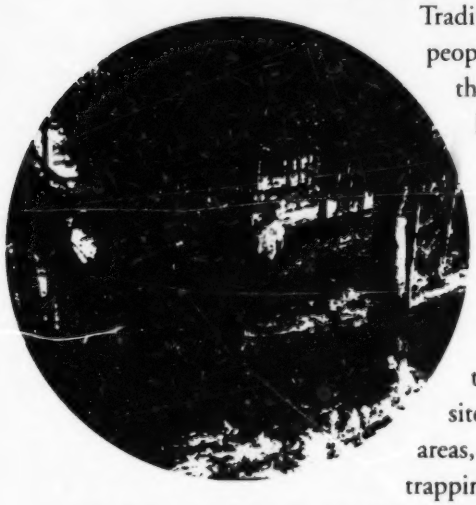
Deciding to Do a Traditional Knowledge and Land Use Study

What is Traditional Knowledge?

Native or aboriginal communities have lived and survived on the land for centuries. Through their accumulation of environmental, cultural, and spiritual knowledge, they have developed rich and diverse cultures. Traditional knowledge is not only seen as a source of knowledge, but also a way of life.



Traditional knowledge is inseparable from the people who hold it, the land they live on, and the relationship they have developed with the land and waters. This knowledge is acquired and passed on to younger generations or to other people through a complex process of language, ceremonies, stories, roles, and spirituality.

Where people learn and practice their traditional knowledge are areas or sites of traditional land use and occupancy. These sites may include graves, trails, plant gathering areas, ceremonial sites, fishing, hunting, and trapping areas. The land used is often referred to as a traditional territory or traditional area. A study area may not cover the whole traditional territory, but may instead be an area of concern or interest. These areas can vary in size from a few square miles to thousands of square miles.

For the purpose of this document, the term traditional knowledge and land use study is being used to recognize the process of compiling and documenting a body of knowledge, handed down orally from one generation to the next, within a community, that connects people to their natural environment.

Why do a Traditional Land Use Study?

Throughout Alberta and other provinces and territories, First Nations and other aboriginal communities are initiating or have completed traditional knowledge and land use studies to address many issues.

Many of these communities have found their traditional territory has been greatly reduced over time, as other land use activities have affected their ability to

hunt, fish, trap and gather on the land. In some cases, resource development activities have affected or destroyed burial and other traditionally used sites. The direct and cumulative effect of these activities is a decrease in the ability of communities to practice their culture and lifestyle.

Another reason for doing these studies is to help measure the value of land that is lost to the community. With traditional land use information, communities, government, and industry can identify potential conflicting land uses and work towards co-operative resolution of these issues, including land claims.

In some cases, these studies have been used to establish economic opportunities for people near or in their communities. These include tourism, cultural centres, and other related activities. Recording and sharing traditional practices is important in teaching the traditional ecological and cultural knowledge to younger adults and children in the community, of course, but it is also important for teaching other people about First Nations culture.

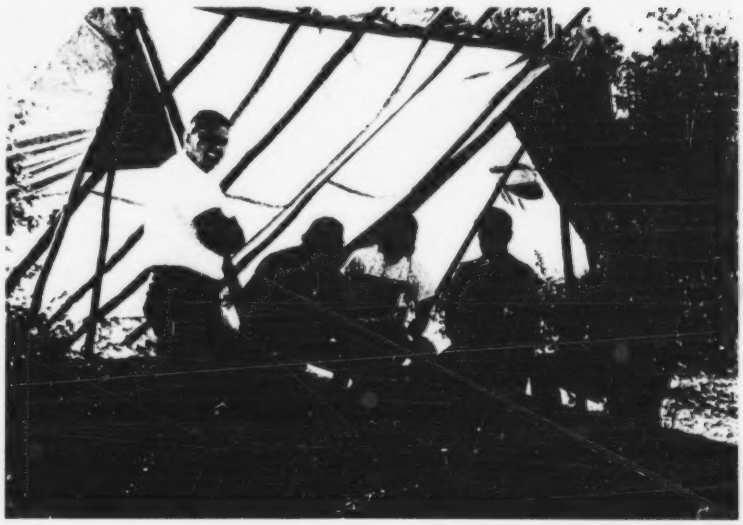
How traditional knowledge and land use study information is incorporated into other agendas, studies, and management processes is an important issue now for aboriginal communities, government and industry. In the past, these reports have only become supplements to other scientific reports or studies, and have not been fully integrated or given equal credit in its value. To address this issue, some project committees are exploring ways to more fully integrate the information, and form a new system of information that uses both aboriginal and scientific knowledge.

Blood Band staff Ken Eagle Plume and Dennis First Rider (from left) discussing their traditional lands with Eugene Burnstick, of the Canadian Forest Service, and Elliot Fox.

Learning from Others

Once the idea to do a traditional knowledge and land use study has been brought forward by a member of your community, the leaders and elders will decide if they want to go ahead with it. Then you can ask someone to gather more information. Some of the best sources of information are individuals or organizations that have been involved or coordinated these types of studies before.

Local universities will have information on traditional knowledge or ethnographies in their libraries. Often, the departments of Anthropology or Native Studies have professors with experience in this area, or they know people who have been involved with them. Many universities have institutes that work with aboriginal communities on various land related issues and research. For example, in Alberta both the Arctic Institute of North America (University of Calgary) and the Canadian Circumpolar Institute (University of Alberta) have assisted communities with these studies.



Taking a break during the Sucker Creek First Nation study. The group includes elders Bill Willier (second from right) and Dan Cardinal (right).

Try to find published traditional knowledge and land use studies done by other communities. These reports describe the methods and the results of their study. These communities can be contacted for further information, and may have the expertise to help you coordinate your own study.

These studies usually include a set of maps accompanied by a report. One of the earlier documents was a land use and occupancy study for the Inuit. It includes maps indicating place names, travel routes, and traplines. Some maps, such as those related to wildlife, also include information on the periods of occupation and significant events. The seasons are also described. Other maps and information include major resource areas, folklore and oral traditions, language, and the location of sites. The report also included a discussion of tribal societies, case studies of hunters and trappers, and views of the land.

The Fort McKay First Nations traditional knowledge and land use study in 1994 recorded maps and knowledge about trails and cabins, spiritual and historical sites, furbearers, big game, fish, birds, berries, trees and plants, traplines, and place names.

Other First Nations and Metis communities have done similar studies.

Another source of information on this topic is experienced consultants. Their names are available from documents, professors, or other communities. Most of the traditional knowledge and land use and occupancy studies conducted in Alberta have used what is called a "participatory action research" process to collect traditional knowledge. This involves the direct participation of community members about the design, collection, and analysis of the information. The community also controls when, how, and by whom the information is used. The researchers or consultants are the facilitators and coordinators, but they do not direct the process. Training others to take over is part of their job. This approach is designed to make sure that the research serves the community's needs before any others.

These consultants may or may not have experts capable of setting up a computerized Geographic Information System (GIS) for storing and retrieving traditional knowledge, but there are other experts available that you may want to consult about this process.

You can invite individual consultants or organizations working in this area to give presentations on their experience, methods, and costs to the leaders or to the whole community. These presentations will teach the people about traditional knowledge and land use research, as well as outlining the possible costs of a study. The costs may vary greatly from one consultant to the next.

There are a number of books and journals related to this topic, and the Internet is a great resource.

The following web sites are worth visiting for further information. The addresses were current at the time of publication.

Web Sites Related to Traditional Knowledge and Land Use

www.inusiaat.com –
Inuit Circumpolar Conference

www.conbio.rice.edu/nae/docs/gwichin.html –
Gwich'in Environmental Knowledge Project

www.carc.org/pubs/v22no1/know.htm –
CARC – Northern Perspective (Volume 22, Number 1, Spring 1994

http://fnfp.gc.ca/sectione/4section/4.13.html –
First Nations in Forestry – Joint Ventures

www.labmetis.org/indigenous.htm –
Indigenous Knowledge: The Ways of Our People – Labrador Metis Nation

www.carc.org/pubs/v20no1/utility.htm –
The Nature and Utility of Traditional Ecological Knowledge
(Volume 20, Number 1, Summer 1992)

www.bc-mining-house.com/opinions/nwnj98f2.htm –
BC and Yukon Chamber of Mines – Is Mining Sustainable:
The ALL Nations Perspective – Native Journal

www.bc-mining-house.com/opinions/nunavut.htm –
BC and Yukon Chamber of Mines – Mineral Exploration in the New territory of Nunavut

www.uoguelph.ca/Research/spark/oasis/environ12.html –
Using traditional native knowledge in modern conservation work; "In with the Old"

www.carc.org/pubs/v25no1/change.htm –
Canadian Arctic Resources Committee – Northern Perspectives (Volume 25 Number 1, Summer 1997); "Ecological Change in the Hudson Bay Bioregion: A Traditional Ecological Perspective."

www.strategis.ic.gc.ca –
Industry Canada site. "Canada's Business Information Site." Data bank of traditional ecological knowledge

www.deneculture.org/tradkno.htm –
Dene Cultural Institute. "Traditional Knowledge Research and Policy Development."

www.carc.org/pubs/v20no1/science.htm –
Traditional Knowledge is Science. (Volume 20, Number 1, Summer 1992)

Reading About Traditional Knowledge and Land Use

McCullum, J.; Ruben, A.; McDonald, M.; Iqulukjuak, A. 1990. Northern Canadian community conservation initiatives: a report from the community perspective. Gov. Northwest Territ., Dep. Renewable Resour., Yellowknife, Northwest Territories.

Campbell, T. 1997. Dene Tha': Traditional land-use and occupancy study. Arct. Inst. North Am., Univ. Calgary, Calgary, Alberta

Fort McKay First Nations. 1996. There is still survival out there: a traditional land-use and occupancy study of the Fort McKay First Nations. Fort McKay First Nations, Fort McMurray, Alberta 2nd ed.

Osherenko, G. 1988. Wildlife management in the North American arctic: the case for co-management. Pages 92-104 *in* M.M.R. Freeman and L.N. Carbyn, eds. Traditional knowledge and renewable resource management in northern regions. Int. Union Conserv. Nat. Comm. Ecol., Morges, Switzerland, and Boreal Inst. North. Stud., Univ. Alta., Edmonton, Alberta. Occas. Publ. 23.

Robinson, M.; Garvin, T.; Hodgson, G. 1994. Mapping how we use our land: using participatory action research. Arct. Inst. North Am., Univ. Calgary, Calgary, Alberta. Athabasca Native Dev. Corp., and Alta./Can. Partnership Agreement For. Rep.

Tobias, T. N., 2000. Chief Kerry's moose: a guidebook to land use and occupancy mapping, research design and data collection. Union of B.C. Indian Chiefs, Vancouver, British Columbia, and Ecotrust Can., Vancouver, British Columbia.

Getting the Community Involved

When you have enough information, it is up to your community, its leaders, and elders to discuss it and decide if they want to initiate a study. Through a series of meetings, community members can discuss the best time to start the project, if they are going to be able to raise the funds they need, and what method best suits the goals and needs of the community. If the leaders decide to proceed with a study, they may want to pass a band council resolution or motion to start the process.

It is critical to the success of this project that the community is supportive and willing to participate in the project. Take time to get the community interested and involved. Keep their interest and support by reporting regularly.

There are different ways that members of the community can participate: planning and managing through membership on a community advisory committee; being interviewers and mappers; or supporting the project, by helping interviewers get together with elders in their family, for example.

Community leaders need to meet with the people to discuss the purposes and objectives of the study. It is also advisable to update the community on the status of the study, through meetings or newsletters or at special functions. Members may also have suggestions on how to use this information to address different community issues.

Getting Started

Some communities have initiated their projects right away, but others have waited until they have raised a portion of the funds needed. Sometimes it can take up to six months to raise the required funds. Your community may want to get started as soon as possible, so they can interview the elders who have traditional knowledge while they are still in good health. All of these factors will have to be considered before establishing a preliminary starting date.

Leaders will provide input throughout the scope of the study, and are ultimately responsible for reviewing and approving the final document, but the day-to-day management of the project is usually the responsibility of a community advisory committee. Members are appointed to the committee by the leadership.

Typically, a community advisory committee will

- Arrange meetings to explain the idea and process to the community, particularly those people who will be active in the project
- Research and create terms of reference to guide the process of the study and to outline its objectives
- Select project partners to support the project from industry, government, or other organizations with an interest in the community
- Arrange cooperative and partnership agreements with these organizations
- Administer project funding
- Facilitate community participation
- Select community interviewers and support staff, arrange for training
- Monitor its progress throughout the study
- Oversee the production and distribution of the study report
- Discuss and decide how the data will be managed
- Update the community regularly on the status of the project.

Refer to the time line on page 8 (Figure 1) for a sample of how some communities have carried out their traditional knowledge and land use studies. Your own time line may look different from this one, but it should include most of the elements.

Generally, projects have been completed in 18 months to three years. Some studies have taken longer due to a lack of funds, or changes in staff or consultants. Meeting deadlines can be difficult, as many functions overlap with each other and some activities have special time constraints, such as the fieldwork required to validate the sites identified.

Identifying a Traditional Land Use Area

One of the first things a community needs to do before proceeding with a project is to outline a preliminary traditional territory or area (Figure 2). Sometimes this area will indicate a former traditional territory, the current traditional territory, or an area of interest. Usually, elders and community leaders meet to decide on the extent of the area. The area boundary will serve as a guide for the interviewers when getting information and identifying sites during the interview process. In other studies, the size of the boundary has varied depending on the purpose of the study, and may change as new information is gathered during the study.

The boundaries of the study area can also be used to identify potential government and industrial partners who may want to participate and contribute to the study. It can also be used to show government and industry where economic development could affect a community's interest in the protection and management of traditional areas. Some communities have or may want to pursue memorandums of understanding with these organizations, to build relationships or partnerships for the future.

If another community has completed a traditional knowledge and land use study, there may be an overlap in traditional territories. This overlap is normal, as

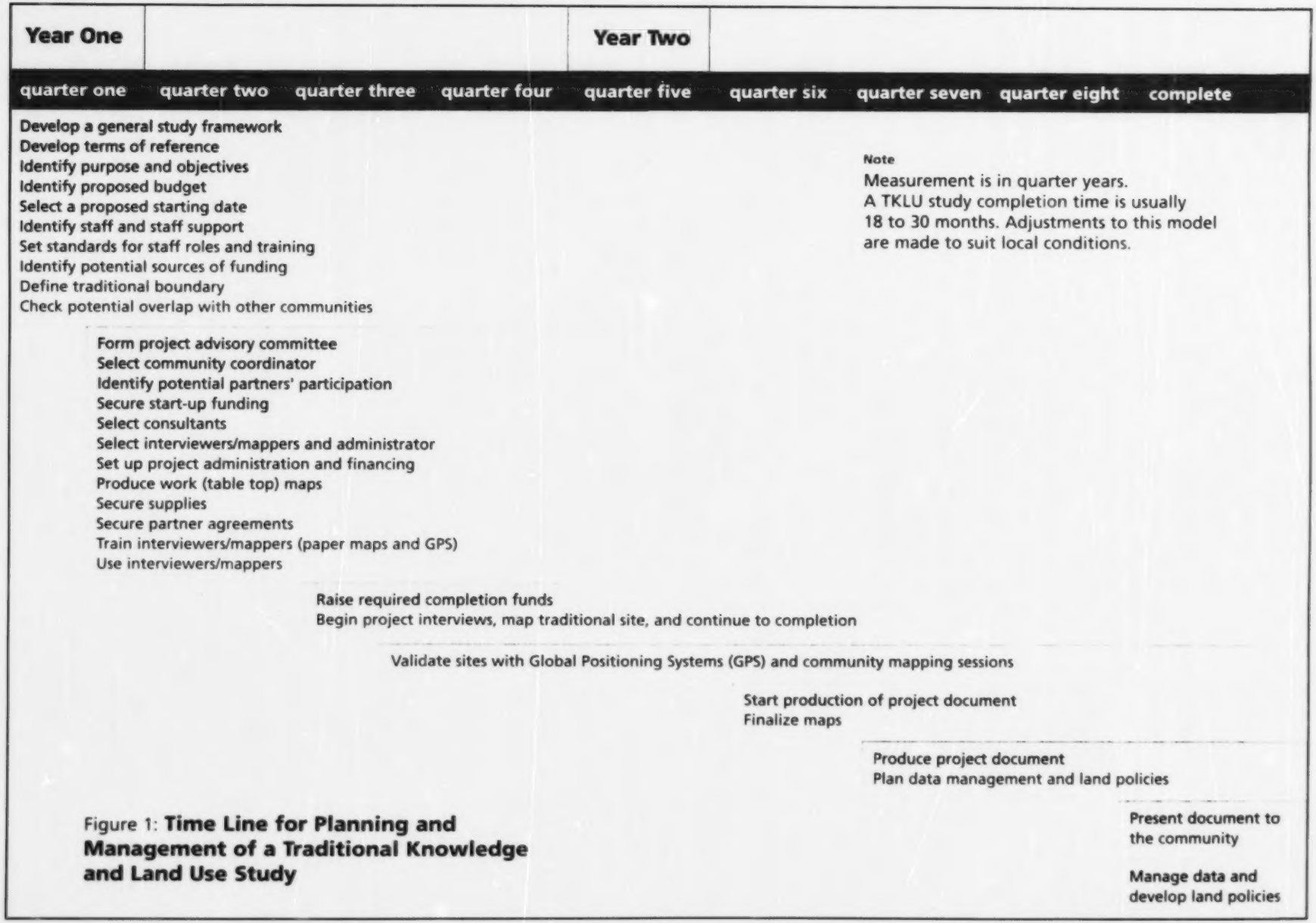

Year One
Year Two
quarter one
quarter two
quarter three
quarter four
quarter five
quarter six
quarter seven
quarter eight
complete
Develop a general study framework
Develop terms of reference
Identify purpose and objectives
Identify proposed budget
Select a proposed starting date
Identify staff and staff support
Set standards for staff roles and training
Identify potential sources of funding
Define traditional boundary
Check potential overlap with other communities
Form project advisory committee
Select community coordinator
Identify potential partners' participation
Secure start-up funding
Select consultants
Select interviewers/mappers and administrator
Set up project administration and financing
Produce work (table top) maps
Secure supplies
Secure partner agreements
Train interviewers/mappers (paper maps and GPS)
Use interviewers/mappers
Raise required completion funds
Begin project interviews, map traditional site, and continue to completion
Validate sites with Global Positioning Systems (GPS) and community mapping sessions
Start production of project document
Finalize maps
Produce project document
Plan data management and land policies
Present document to the community
Manage data and develop land policies
Note
Measurement is in quarter years.
A TKLU study completion time is usually 18 to 30 months. Adjustments to this model are made to suit local conditions.

Figure 1: **Time Line for Planning and Management of a Traditional Knowledge and Land Use Study**

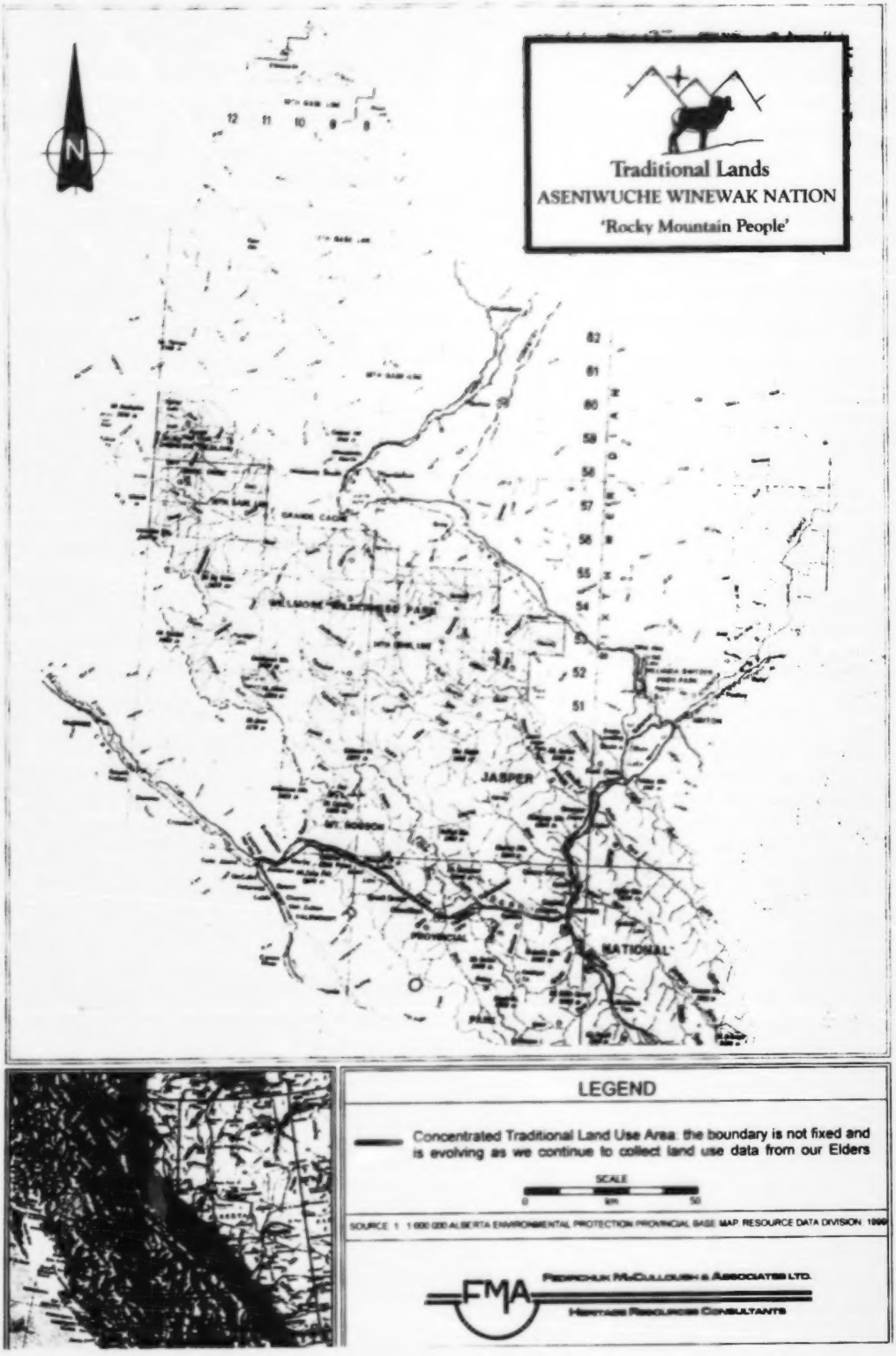

Traditional Lands
ASENIWUCHE WINEWAK NATION
'Rocky Mountain People'
N
JASPER
LEGEND
Concentrated Traditional Land Use Area: the boundary is not fixed and is evolving as we continue to collect land use data from our Elders
SCALE
FMA

Figure 2:
Example of Traditional Territory or Lands

there have always been historical and social exchanges among adjoining aboriginal communities. Overlaps do not present a problem when collecting information, but can be a problem when communities are negotiating economic opportunities with specific companies within their boundaries. This can put industry in the difficult position of having to choose which community they want to do business with. Some communities are now discussing joint ventures to help resolve this issue.

Choosing a Community Coordinator

The choice of a community coordinator is sometimes obvious, if there is a qualified individual who has already taken a lead role in the project. In other cases, community leaders will have to choose someone from among those who have the necessary skills. You will need someone of good standing within the community, with the ability to coordinate and facilitate the various components of the project.

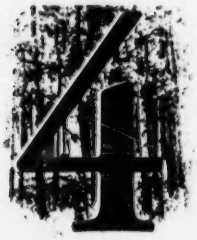
Choosing a Consultant

If your community wants to select a consultant, consider bringing them in early in the project to help with drafting the terms of reference and arranging funding for the project. Selecting the right consultant can sometimes be difficult at this stage. Most communities will check with other communities before making their choice.

Sit down with potential consultants and discuss the project with them. They should be prepared to explain how they would work with the community to meet its needs, provide a detailed outline and the price of their work. You will want to look for experience and expertise in all aspects of the project, including familiarity with traditional knowledge and the land. They should have experience and be able to train the community in interviewing, mapping, and computer technology.

Robert Ermine (elder), Sturgeon Lake First Nation, Saskatchewan

Terms of Reference



Most communities prepare a plan, or terms of reference, before starting their project. The terms of reference can be sent out to consultants to solicit proposals from them. They can also be sent to potential funding partners, who may contribute to the project costs. Your terms of reference will include the purpose and objectives of the study, the method, and a proposed budget.

The Aseniwuche Winewak Nation of Grande Cache has kindly agreed to provide a copy of their terms of reference for their Traditional Land Use and Occupancy study to serve as an example (see Appendix). You may want to begin with this example, and adjust it to meet the needs and objectives of your community. The budget for a study will vary with the number of interviews, the size of the area, number of sites to validate, and increasing costs over time.

Purpose and Objectives

Begin by identifying your purpose for doing a study. You may want to help settle a land claim, develop partnerships with industry, or identify and protect traditional sites still used by the people.

One of the most important purposes for studying traditional knowledge is to document it before it is lost. Previous studies have indicated that a small portion of community members, primarily elders, hold a large portion of traditional knowledge. There is also a concern that within 10 to 15 years these people will be gone and so will their knowledge, if it is not documented now.

The purpose of the study will also help to determine its objectives, and the type of information that will be collected and documented for the final report. This may include particular land-use maps or certain information needed to address issues or concerns within the community. Also, consider the format of the information, if the information will be contained in a GIS, and how the information will be used.

Project objectives could include

- A proposed start and completion date
- An outline of the goals and proposed process of the project
- A list of people who will be interviewed for the study, including those who may live outside the study area

Charlie Cardinal (elder), from Sucker Creek, working with local maps.

- Identification of the roles and objectives of the people involved in the study
- Identification of the training and equipment that will be needed
- An outline of a budget to complete the project
- A strategy to field check or validate the sites
- An idea of what kind of book and maps the community wants.

Your Budget

The budget for a study depends on the kind and number of activities to be undertaken. They can include training, interviewing and mapping, field validation, GIS training and set up, travel, supplies, publishing costs, and the cost of coordinating the study by the consultant or a community member.

The availability of funds will also affect the budget and limit some of the activities of the study. For example, a community may not have enough funds to set up a GIS. Unpredictable expenses can arise during the project, because of additional interviews, field checks, or delays in some parts of the study.

Funding sources depend on a community's own resources, as well as the relationships they have or want to build with other organizations. A community may want to contact industrial or government organizations in their traditional territory to form partnerships or build relationships, not only for project funding, but for economic reasons as well. These organizations could include forestry, oil and gas, and mining companies, as well as provincial, municipal, and federal governments.

Also, individual government departments may have programs available to fund part or all of the costs of a project. Universities may also have programs or grants to fund these studies. It is important to carefully review the conditions of each grant

before applying, in case the grantor is requesting shared copyright to the material being produced.

When requesting funds directly from an organization, attach the terms of reference to the letter. If they have been drafted carefully, they will provide enough information for the organization to study your request. Arrange a follow-up meeting to discuss what information the organization can access and under what conditions. You may need to draw up an agreement covering this.

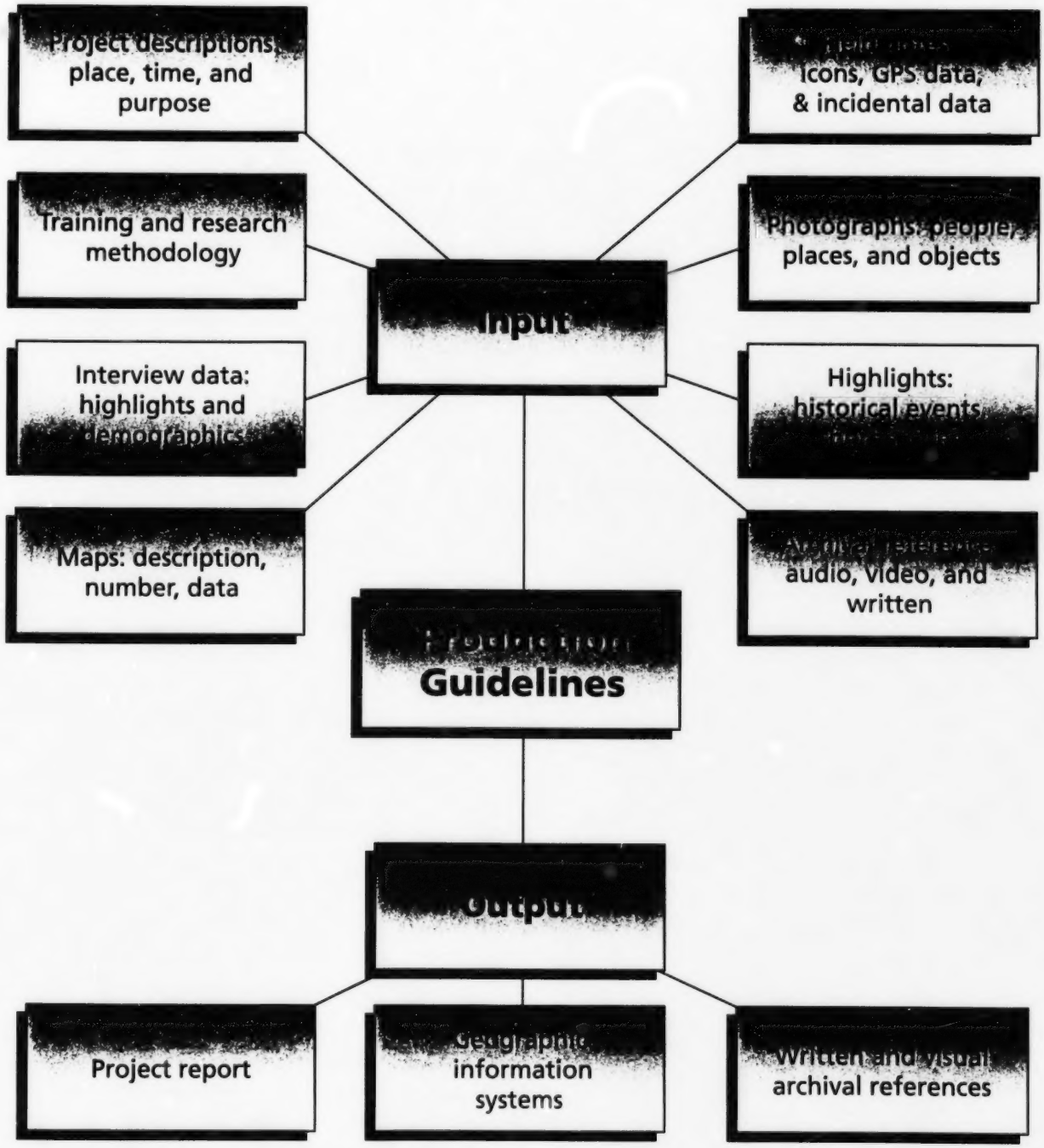
Some organizations make financial contributions; others may contribute in-kind services, such as helicopter time, GIS/GPS training, maps, and use of all-terrain vehicles. The community initiating the study usually contributes to the project, either financially or with in-kind services.

Administering Project Funds

The funds contributed to the study should be kept in a separate account, and only used for that purpose. This may be required in the terms and conditions of your agreement with other sponsoring organizations, but even if it is not, a separate account is a good idea. Funds kept in a general administrative fund may be easily transferred or used for other projects. Also, a separate account will make it easier to keep a record of the expenditures of the project. Periodic budget reviews during and at the end of the project to compare actual costs with projected costs is also a good exercise. Funding partners may also want to review their investments at the end of the project.

Refer to Figure 3 for a chart illustrating an overview of a traditional knowledge and land use project.

Figure 3: **Overview of a Traditional Knowledge and Land Use Project**



Collecting Stories and Making Maps

Most projects will take between 18 and 30 months to complete. The interviewing and mapping starts the project and the final report usually ends it.

Deadlines can be difficult to adhere to, but it is good to set goals. Extra time may be needed to field check the sites, because weather and the season may affect this work. Extra time may also be needed to do the interviews. This may happen for a number of reasons, including staff changes, more interviews are needed or it may not be the time of year when most people are available. It may also take extra time to get the report published.

Who Does the Work?

Community Advisory Committee

This group is made up of members of the community. It usually consists of elders and other leaders of the community, as well as those members working on the project. The Community Advisory Committee works together with the community to outline and achieve the objectives and goals of the project. They are also responsible for community participation and updating the community on the project.

Project Advisory Committee

The community may decide to set up a Project Advisory Committee. This committee is generally made up of representatives from the community, the consultants and funding partners. Their objective is to facilitate and give direction to the project and to assist with any problems that may arise, including hiring and budget problems. It is also a vehicle to provide direction and information on the project to the community. This group does not have to meet on a regular basis, but can meet at the different stages of the project.

To begin a traditional knowledge and land use study, you will need to fill several important positions. In some cases, one person may be responsible for more than one role. For example, the project coordinator could also act as a trainer and be one of the interviewers.

Community Coordinator

This person will be a liaison between the community and other organizations involved in the study and will be a member of the Project Advisory Committee for

the duration of the project. They also assume the lead role in the community on matters related to the project. The coordinator also assists the community accountant with the administration of the budget and is partially responsible for the production and delivery of the published report.

Project Coordinator

The project coordinator is usually a consultant who has had experience facilitating traditional knowledge and land use studies. The coordinator helps to facilitate the activities of the project and is jointly responsible with the community coordinator for the participation of the community and other partners, and for completion of the final report of the project.

Interview and Mapping Trainer

This person will train the interviewers and help coordinate community mapping sessions. After the training, they will advise the community interviewers, the Project Advisory Committee, and other staff as needed, and they will help produce the project report. If possible, this person will train the field crew to use the GPS.

Interviewers/Mappers

These people are critical to the project. They are chosen from the community, and usually have a good knowledge of their people, culture, language, and the land, and will receive formal training in interviewing techniques. Depending on the number of people to be interviewed and the project deadlines, studies have needed as many as four interviewers.

Their tasks include setting up the interviews, conducting the interviews, participating in community mapping sessions, and usually transcribing the interviews. An interviewer may also transcribe the interview tapes, or the community may have an individual who may be able to transcribe the interviews for them.

It is also preferable if the interviewers are trained in the use of the GPS, as well as the interviewing. One of these people can also assume responsibility for the day-to-day care and handling of the GPS equipment and the data produced by its use, and they may be responsible for assisting with the coordination of the field trips to locate and identify the sites.

Administrative Staff

A person is needed to provide part-time administrative and word processing services to the project. Their activities usually include typing, sending letters, keeping a record of the interviews, providing supplies, and if possible, transcribing the tapes of the interviews.

Accounting Staff

The project will need a person from the community to provide part-time accounting and payroll services to the project. This may be someone already working for the

community in an administrative position. This person will be responsible for providing advances, paying wages and invoices, and keeping a record of all the expenses of the project.

Technical Assistants

During the project, it may be necessary to hire people with particular expertise, such as a GPS trainer. The community may also require one or more people to be trained to use the GIS. These people must be able to competently download, manipulate, digitize, interpret, store, retrieve, and manage the data generated by the project.

Mapping Specialist

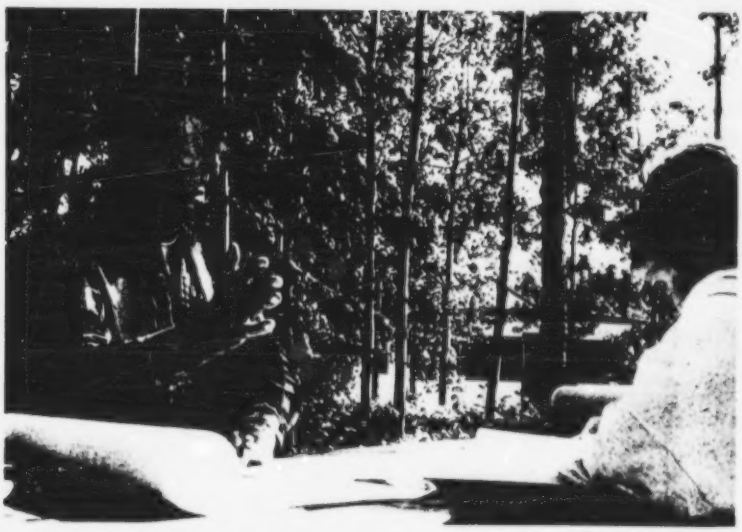
Many communities have used GIS to store, interpret, manage, and retrieve their traditional knowledge and land-use maps. This process is versatile and information can be added to it at any time. This specialist may provide base maps for the project and the interviewers, GIS training to the community technical assistants, assist with the production of maps for the report, and provide technical advice to the Project Advisory Committee. If GIS is not available, a draftsperson will be needed to produce the maps.

Other community members, such as the elders' council, chief and council, interpreter, and administration staff may be asked to participate as needed. Their presence is particularly important at meetings where information is shared and decisions need to be made.

The Interview Process

Effective interviewing is the core of any successful traditional knowledge project.

Traditional knowledge is important, because it is greater than the experience younger generations can obtain in their lifetime. This knowledge is passed down orally from one generation to another, and can be lost once the elders pass on, although information may also be available from other sources. The relatives or friends of a knowledgeable person, or people who have worked or studied with the community, may know a particular craft, art form, or language. Some information may also be stored in a library or museum.



Cynthia Pyc (Arctic Institute of North America) interviewing elder Bill Willier from Swan River First Nation.

Other sources of knowledge can be stories or legends. A traditional story or legend that has no known original source has originated at some time in the history of the people, and provides information about their culture. These stories are usually about people, places and historical events, and may lead to sources of authentic and reliable information. Personal stories are also important.

Many elders are motivated to participate in a traditional knowledge study because the information may be used for educational purposes, especially in schools their grandchildren attend. Also, it is part of a community's culture, and the elders are the original source of that knowledge.

Selecting Community Interviewers

One of the first and most important things to do when initiating a study is to prepare for the interviews. This will involve the selection of interviewers and compiling a list of people to be interviewed. The selection of community interviewers is critical, as these people will be interacting with community elders and other members of the study. They must be well respected and trusted by the community and have some knowledge of their community's cultural practices. It is preferable if they are able to speak the local language; otherwise, an interpreter may be necessary.

The number of interviewers will depend on the deadlines, the budget, and the

number of people to be interviewed. It is also a good idea to have one or two additional people available who can take over if another person leaves the project. These people can be trained along with the other interviewers.

Who Should be Interviewed?

Everyone in the community has some traditional knowledge, but more can be obtained from the oldest members, who have practised and lived this knowledge. It is important to interview these people first, in case they pass away before the project is completed. There may also be people in the community who are not elderly, but have special knowledge or experience about certain traditional activities. The budget constraints will also determine the number of interviews. The list can be reviewed to see if there are people who could be interviewed later, if more funds become available.

The project's successful completion is possible only with the participation of the knowledgeable people of the community. Sometimes there will be reluctance or refusal to do the interviews.

If a person is reluctant to participate, they usually have a reason. Some people will recall the days when they were told that aboriginal knowledge was without value, and many of the oldest people will remember being ignored. Some feel traditional information is very secret and not to be told to outsiders, while others may have been studied before and have seen no benefit from it. Political alliances and family relationships can also influence peoples' attitudes about being interviewed.

People are more willing to participate when they know their information is important and that their participation is valued. Consequently, those people identified as valuable to the study may need to be encouraged to take part in the interview process. It is critical that these members are well informed about the study and its short- and long-term benefits. This is the task of the community leaders, the coordinator, and the interviewers. They should also be acknowledged and respected for their knowledge and the contribution it will make to their community for the future.

You may need to locate and interview people now living outside the study area. These people may have been former residents or may live in another community that traditionally used part of the study area.

Supplies

Interviewing supplies include a tape recorder and microphone, tape cassettes, camera, film (slide or print), spare batteries, writing equipment, and large-scale maps showing the traditional territory. If available, and the interview subject agrees, a video camera can be used to record the interview. A cloth bag or briefcase can be purchased to keep most of the supplies together.

Setting up the Interviews

Once there are enough funds to proceed with the interviews, and the elders have been selected, the interview process can begin. The interviewers should meet to review the list of people to be interviewed, and decide who would be the best to interview each person. In some cases, a woman may interview another woman, and in other cases, family members may want to interview their own relatives.

When doing the first interview, the interviewer will arrange to meet in a comfortable place, often at the elder's home. It must also be at a time that is convenient for the person being interviewed. Most interviews take approximately two to three hours. Any longer, and the person becomes tired. People are usually interviewed two, three, or four times, depending on the amount of information they have.

Interviewer Fred MacDonald (left) reviews map locations with elder Ernie Lacorde, a longtime hunter and trapper.

How to Interview

Before the interview process begins, the interviewers must be trained. A consultant is usually brought in who has knowledge and experience. The interviewers are paid to attend a two-day (12-hour) workshop that includes learning interview skills, developing a list of helpful questions, mapping, and using the equipment. The interviewers are taught that the person being interviewed has a "book" of information in their head, and it is up to the interviewer to obtain as much of that information as the person being interviewed is willing to give.

When conducting an interview, the first thing an interviewer does is to make it clear to the person being interviewed why they are there. For example, the interviewer may ask: Do you know about the traditional knowledge and land use study that is being done by your community? If they answer no, then you would explain the project.

Otherwise, the interviewer would go on to explain that they wish to talk about their knowledge, how they and their family did things or lived. They would also reinforce how important this knowledge is to the community and future generations. Next, they would ask permission to write and record their information, and to mark any sites on a map. If there is a problem with one of these activities, the interviewer should try to clarify their purpose. If a person does not want to be recorded, but is willing to have their story written down, then writing will have to do. The interviewer must always have the consent of the person before they proceed.

Your trainer's suggestions will probably include:

- Stick to the subject while interviewing and help the person being interviewed to do the same.
- Ask leading questions to keep focused on the purpose of the interview. For example, if you are told about a traditional way of preparing food for winter, ask another question that brings out detail: Does your family still dry fish in the fall?

- Avoid interrupting an answer.
- Be alert to cues given from the person you are interviewing about other possible questions. Let people know about something in the discussion that needs further comment.
- Encourage a person to give an answer even though they may wonder why they are being asked about something they think the interviewer already knows. The interviewer should ask questions even though they know the answer.
- Be careful not to insult or embarrass a person by asking questions you are reasonably sure cannot be answered.
- Invite a person being interviewed to suggest where an answer to a question could be found, if they are uncertain about their answer.
- Be prepared to interview more than once, as elderly persons may become tired or restless after two or three hours.
- Use key words as aids, for example, words that describe all of the objects referred to in the map legends.
- Avoid interviewing if there are significant distractions, such as community events, family gatherings, or wakes. Be sensitive to smaller distractions such as children playing, visitors, or household chores.
- Allow a minimum of 24 hours between making and keeping an appointment. Up to three days is a reasonable standard.
- A desirable way to avoid being insensitive to political and social conditions is to be non-partisan and unconditionally focused on the objectives of the interview.
- The language of the land has words that are not familiar to many readers of the finished report, e.g., push-up (not an exercise), carryall (a toboggan), break-up, etc. Therefore, it will be helpful to build a glossary of local terms.
- As the project continues there should be more community awareness of what is happening. Some people will know why they are being interviewed, so they may anticipate the questions and have answers that were not thought of at the initial interview.

Questions to Ask

During the interview, the interviewer will ask a number of questions. These questions will vary depending on the type of information the community requires to meet the purpose and objectives of the study.

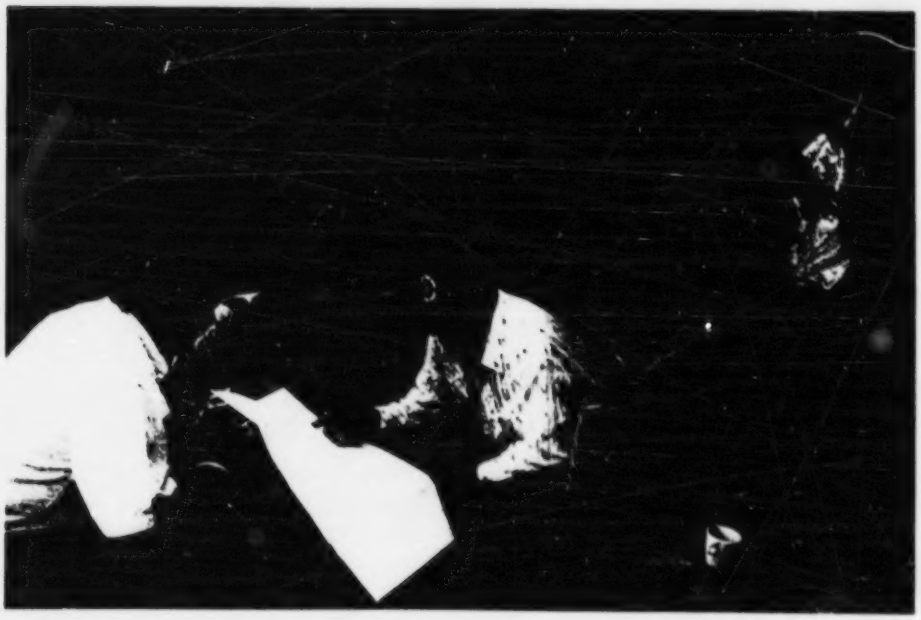
Introductory Questions

- Have you heard about the Traditional Knowledge and Land Use Study that is being done?
- If "yes," continue. If "no," explain the project.
- I (we) wish to talk to you about what you know about how you or your family did things (or lived) in the past and today. Your information is important and valuable. Do you mind giving me (us) this information?

- If "yes," continue. If "no," take time to explain the project, its importance and benefits to the community and encourage their participation.
- Would you be willing, after I (we) have written and recorded your information, to mark on the map the different locations of important sites, such as burial sites, cabins, trails and other things? If "no," explain the mapping plan.
- May I (we) use a tape recorder to record what you say? May we take a picture of you? May we videotape this interview?

Questions about Traditional Land Use

- How long have you or your parents, or grandparents, lived in the traditional area? What is your family history?
- Did you, your parents, or grandparents hunt and trap full time? Where did you trap (draw on map)? How long? Do you have a trapline now? What is the number?
- Do you know the location of any new, old, or fallen-down cabins? (Indicate on map)
- What trails do you know about? What are their names? Where are they on the map (draw in)?
- Do you know where any people are buried? (Indicate on the map) When were they buried there? How did they die?



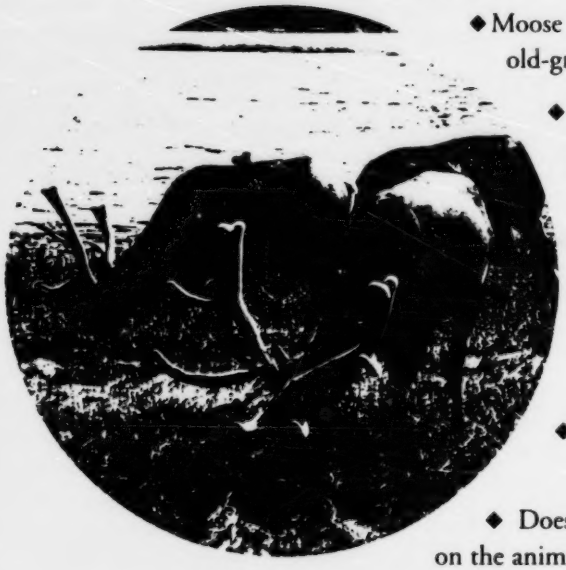
Stuart Janvier (left) and Elmer Herman (centre) review map locations with craftsman and elder Baptiste Janvier.

- Do you know the location of any sacred areas and why they are sacred? (Put locations on the map)
- Do you know of any special meeting or celebration places that were used in the past or are used today, by your family or friends, or the community? (Indicate on map) What were these places used for (wakes, dances, etc)?
- What animals, birds, fish, insects, and plants (berries, herbs, trees, or shrubs) were used for food, or other special occasions?
- Are there any special places where plants are collected for medicine, food, or other purposes? Where are they located? For example, berry patches? (Indicate on map)
- Are there special places where the community goes to fish or hunt? What season do they go?
- What animals do you or did you trap on your trapline? When and where?
- What animals do you hunt or catch for food? Where?
- What fish do you catch? Where?
- What birds do you hunt or use for special purposes? Where?
- Are there any animals, birds, fish, or insects that should be protected?
- Are there any special areas that should be protected for the animals, fish or birds?
- Will you explain how the following items were produced?
  1. food
  2. clothing
  3. bedding
  4. artworks
  5. crafts
  6. tools or utensils
  7. weapons
  8. hunting, trapping, gathering or fishing gear
  9. housing
  10. storage
  11. toys
  12. musical instruments
- Do you know any traditional or old stories or songs?

Other Helpful Hints and Questions

These comments are intended to help the interviewer form questions that facilitate answers that enhance the retrieval of knowledge. These comments may or may not be factual as they are written, but they should help in the search for factual data. Treat this as "helpful hints" only.

Mammals - big game



- Moose and deer will forage new-growth forest in preference to mature old-growth forest.
- Moose will forage shallow water lakeshore reeds.
- Moose and deer are not usually found in open large-range muskeg habitat.
- The woodland caribou may be forced out of its habitat range by fire.
- Big game (by species) range in townships ____ to ____ and ranges ____ to ____?
- Recreational seasonal hunting, predator kill, and vehicle road-kill may threaten a sustainable population.
- Does increased access to the bush-land place negative pressure on the animal population?
- Is there a caribou species that is unique to the mountains?
- How soon after a forest fire will animals return?

Mammals - fur bearers

- The fox is known to be in the general area along the ____ River.
- Although not plentiful, some animals are seen throughout the whole region.
- Animals that are rarely seen, and then only in specific areas, are ____.
- Wolverine were seen in the 19__s. Have any signs been seen since?
- Have skunk been seen in recent years?
- Grizzly bear habitat is known to be in special areas only.
- Which fur bearing animals are not known to be in the project area?

Fish

- There is "better fishing" in some places than there is in others; where?
- Native food fishing is limited by the amount needed. Is there waste?
- It is a traditional custom to give fish to elders who are no longer able to fish for themselves.
- Dried fish is a delicacy, and is a respectful gift.
- Commercial fishing by "outsiders" and sport fishing has a much greater impact on the fish stocks these days than does traditional fishing.
- Pike, walleye, whitefish are in all lakes and major rivers.
- Most fish species are found in rivers, but their primary habitat is lakes.
- Brook trout and grayling are stream fish.
- Suckers and chubs are the smallest of the fish species and are hunted along shorelines of streams, rivers and lakes.
- The burbot, also known as fresh water cod, is found in the area. It is not popular as a food fish.
- The sturgeon is or is not plentiful in this region.
- When every household had a dog team, fish of any kind was often the only available dog food and was caught and preserved (dried) in large quantities.

Birds

- This study is limited to the birds most commonly used. The most important of these are the grouse, ducks, and geese.
- All birds are a potential source of human food.
- Waterfowl are a source of meat, down and feathers for quilting, waterproof bags (skin of waterfowl), pouches (head of pelican), ornaments (beaks and nails and feathers), bait to catch fur-bearing animals.
- Birds compete with humans for the animal, fish and vegetation food supply of the region.
- Birds supply eggs for cooking and eating.
- Birds that migrate from the north to this region are ptarmigan, snow bunting and arctic owls and ravens.

- Three species of grouse (sharp-tailed grouse, ruffed grouse and spruce grouse) are common to the area year-round, and are an important food supply. The willow ptarmigan joins these three in the winter months. The blue (mountain) grouse is in the mountain range.
- Is the blue grouse in the region of the current study?

Berries, herbs and other plants

- Is there a special place for gathering plants for medical remedies?
- Is it possible that a plant habitat is rare and is known only within a definite locality?
- Some herbs and plants are used for a sweat lodge ceremony.
- The use of plants and herbs for medical remedy is being replaced by prescribed drugs.
- It is possible that prescribed drugs could be produced from aboriginal knowledge.
- What herbs are a food or food supplement?
- How many fruit bearing plants were there? How were they used?
- Bearberry is plentiful. Its leaves, turned reddish-orange when ripe, were a traditional source of kinnickinnick (tobacco). Kinnickinnick also comes from other sources—the red willow bark, for example.
- Berries are plentiful in sparsely located patches.
- Productive areas do not repeat year after year. They may skip a year or two of producing fruit.
- Rose hip (Alberta rose) and raspberry are found in disturbed land, e.g., roadways.
- The dewberry, in the raspberry family, is indigenous to the boreal forest.
- Strawberry is found in open areas and is the first berry to ripen (late June).
- Black currant, red currant, and gooseberry are rare and may be found on ground that has been disturbed by equipment or fire.
- Traditional use of berries included food, dye, berry juice, beads.
- Berry production is guided by growing conditions. Blueberry plants, for example, although plentiful in an area in one year, may not bear fruit in a following year.
- Blueberry and bog cranberry are often found together on sandy and shallow bog-covered ground.

Trees and shrubs

- How were trees and shrubs traditionally used?
- Trees and shrubs provided fuel, food, medicine, building supplies, shelter, instruments, tools, and art and craft supplies.
- Generally, trees and shrubs provided the sustenance for all living creatures.
- Jack pine or spruce is the favourite wood for cooking and heating, but all wood may be used for that purpose.
- Spruce is the preferred tree for constructing log homes and other buildings.
- Birch and larch are hardwoods and preferred for the construction of toboggans and snowshoe frames.
- Birch bark is extensively used in the making of household crafts, ornaments, shingles, and canoe covers.
- Birch trees are tapped for sap that is rendered to syrup.
- There may be groves of birch trees with sap-collecting incisions.
- Tamarack (larch), known to bush people as Indian hardwood, is used to make toboggan runners and snowshoe frames.
- Willow branches are used for the main frame of a sweat lodge.
- Willow root is the preferred tinder to smoke-cure meat and fish.
- Willow branches are used to make baskets and other crafts.
- Spruce root is rope.
- Spruce gum (sap) is glue, and it is medicine.

Homes, cabins, land sites and traditional place names

- Lakes and rivers had aboriginal language names, usually named after a bird, fish, animal or a feature of the lake, e.g., Island Lake, Long Lake, Trout Lake. In some cases, the English language name is a literal translation.
- Non-aboriginal people have renamed some aboriginal places to honour non-aboriginal people.
- Were traditional place names named after the original people?
- Newcomers were inclined to honour themselves or someone they knew by naming a place by the name of that person.

Alphonse Beaver, lived most of his life in this log home he built himself. In this 1995 photograph, he was 96 and still independent.

- Are aboriginal sites accessible?
- Is current owner permission required?
- Date and mark the location of the oldest known cabin site.
- Name the place of multiple cabin sites and single cabin sites. Was this a permanent community or was it a seasonal camp?
- New cabin – was it made by an aboriginal person or was it made by a non-aboriginal person?
- Which cabins are still used?
- Are there traces remaining of equipment, tools, canoes, and toboggans?
- In what state of decomposition is a cabin - only an outline or partial structure?
- Does a sod mound remain that was once banked around a building?
- Some sites may be 19th-century trading posts, owned independently.
- Most home base cabin sites are on the shoreline of a lake or major river transportation route.
- Overnight cabin sites are usually on overland transportation routes, possibly along a small tributary stream, and they may also be stopover cabins between communities on a main transportation route.

- Every major lake in the region may have at least one community site; some have three or four.
- Most lakes and major river systems will be connected with an overland trail, used by anyone, mainly in the freeze-over season.
- Traditional trap line cabin sites may have several trapping and hunting trails in all directions, many used solely by the trapper in that area.
- Trace remains of a "burial" cabin may be a cabin in which human bodies were placed—a form of burial not practised since about 1920.
- Some cabins may have been left unoccupied because of an unexplained death within the cabin, e.g., an unknown illness causing death.
- Trappers and hunters traditionally stored hunting gear in their cabins and hunting equipment and tools in the bush—hanging from trees.
- All aboriginal products were biodegradable. There was no garbage.
- Evidence of human habitation may include products that would degrade over centuries, e.g., stone tools, stone structures, stone ovens, or stone fish traps.

Trails, burial sites and sacred sites

- There may be many unregistered burial sites throughout the territory.
- Most burials since the 1940s are in large community cemeteries.
- Burial may have been in the trapping and hunting communities, in quasi-organized plots.
- Burial sites are often on a high sandy knoll where markings are preserved.
- Around the turn of the 20th century, burials may have been along trap line and hunting routes.
- The oldest burial markings will be a hollow in the ground, a natural stone marker, a log, or board marker.
- Trees, shrub and grass may cover some burial plots.
- There are cemeteries and some single burial sites that are fenced with vertically standing boards, apparently influenced by practices introduced by foreign people in the 18th and 19th centuries.
- Some graves will contain more than one person.
- Registered cemetery sites in today's communities may not need to be mapped, but they could be recorded by place and number of plots.

- Many of the current elders will not be buried in the community of their birth.
- Traditional wakes are still practised.
- Sacred sites may include remnants of sweat lodges. They may be once again used as a place of spiritual comfort, or for personal and social healing.
- Some of the oldest people know where their parents, grandparents and great-grandparents were buried.
- Burial practices may have been to leave a body in a secluded spot near a tree, or place the body on a platform that was hung from a tree, or leave a body in an abandoned cabin, and then let nature take its course.
- During an influenza epidemic in 1919 there were mass burials.
- Infant mortality was high up to the mid-20th century.
- Some people were buried with personal possessions.
- Some graves have a container of kinnickinnick in the peak or the grave cover. This is an offering-to-the-dead given by family at the time of burial.
- Seismic work and construction may have interfered with graves.
- Sacred sites are spiritual sites. Spiritual images may vary from one region to another (not all native cultures are alike) or there may be none.
- There are old trails that connected a trapper's own trapline sets, or connected neighbouring trap lines.
- There are main trails connecting large lakes where there were one, two, or more communities of people along the shoreline of the lakes.
- The oldest trails are foot-trails and dog team trails. Somewhat later, horses and dogs backpacked supplies and equipment over original trails.
- During the last half of the 19th century, the horse- and oxen-powered sleigh or wagon was used to haul new-age equipment, supplies and food.
- Corduroy roads are logs laid side by side transversely.
- Walking, dog team and horse trails remain indented in muskeg.
- Canopies of tall trees cover the underbrush of old trails.
- Trail meeting places may be marked by a lobstick.
- There is now a public highway along portions of the original walking and dog team route.

- New roads tend to go through side hills, over hills and over muskeg, while old trails followed the contour of the land, went along rivers and lakes.
- Trail crossings on small streams were bridged with logs and stones.
- Trading post sites are specifically connected by the wagon and sleigh trails.
- The longest dog team trails, connecting trading communities, are probably those used to deliver supplies.
- Seismic line and oil and gas cutlines are now a straight, clear and faster route to take to connect with trapline trails.
- These days, many people commute from a central service community to their trapping site.

Recording the Interview

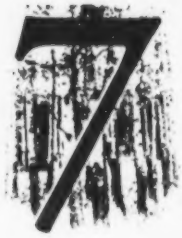
During an interview, the information is usually written in longhand, as well as recorded on cassettes or video, with the permission of the interviewee. Often the interview will be done in the first language of the person, and will have to be translated later. The interviewer will take a photograph, with the permission of the interviewee. All of these materials must be labelled and carefully stored as part of the original interview.

Afterward, the interviewer will review the tapes and their notes and make a record of the time spent on the interview. The interviewer or another person may be responsible for transcribing the interview notes and tapes.

Rewarding Participation

Participation in the project may be reward enough for your interview subjects. Some people may be offended by an offer of cash for their knowledge, while others may expect an honorarium. A gift acknowledges a courteous relationship between the interviewer and the person being interviewed, but does not have to be tobacco.

Get advice if you are unfamiliar with the community's expectations. Certainly, cover any expenses the participants have. When these people are invited to meetings or community mapping sessions to review project information and offer constructive comments, it is courteous to provide transportation and a meal.



The Mapping Process

Putting your stories on a map will help your readers understand them.

When you take the data out of your file cabinets, boxes, and computers and put it into a visual form, you will make information from traditional knowledge collection projects much easier to access. Mapping techniques will vary depending on your resources, but most mapping projects follow these steps:

- Identify boundaries. Decide on the north, south, east, and west boundaries of the area, using latitude and longitude coordinates or by physical features, such as rivers, mountains, or roads.
- Decide the topics to be covered. Refer to the goals and objectives of this project.
- Obtain or create base maps of the study area. Although maps from a government agency will provide a very accurate base map for the project, maps created by the community may be appropriate in some situations. A base map created by the community should feature a north arrow, linear scale, key physical features (lakes, rivers), and a title for each map that describes what is being illustrated.
- If possible, collect other sources of information. These include interviews and information taken from existing sources, such as reports. Interviews with community members involve highlighting areas of significance by identifying or drawing on paper maps or using a GPS to locate a site in the field.
- Store the data collected via GPS in a database, if you do not have GIS to produce maps from the data. Later, if the group that organized this study can afford the software, a GIS can then be used to organize and analyze the collected information and generate maps.

Map Production

The mapping process is designed to take into account the financial resources of the group involved in a traditional knowledge project. If the budget permits, a series of draft maps can be made for the community to examine. Revisions are welcomed and will be incorporated in the final map production. The following will address the important issues related to the mapping of traditional knowledge data.

Map Scale

After the scope and topics to be examined by the project have been clearly defined, geographic concerns such as the scale of the base maps must be addressed. The geographic size of the traditional knowledge project is a key consideration when determining the scale used in the mapping process. Scale is the relationship between distance on the map and distance on the ground. A map scale is usually given as a fraction (1/10,000) or a ratio (1:10,000).

In general, scales of 1:50,000 to 1:250,000 are most commonly used for traditional knowledge projects. Maps of 1:250,000 are used for large area projects, while 1:50,000 maps are used for small areas. A scale of 1:50,000 shows contours and landforms quite well. There are instances when 1:1,000,000 data may be sufficient as a backdrop.

Keep in mind that as the scale increases (e.g., from 1:250,000 to 1:50,000—less detail to more detail), the cost of map production and the cost of geographic data also increase. The following table shows the relative cost of geographic data by scale and the associated cost of data clean up at the time this report was published. Clean up in this context refers to the process of ensuring that

- All geographic data is present.
- Features from adjacent map sheets line up perfectly.
- All area features are represented by closed polygons, not a series of lines around the perimeter.
- Attributes are properly assigned to all corresponding geographic entities.
- Labels for all relevant features can be generated and placed in the correct location.

These costs are approximate and based on the area covered by one 1:1,000,000 map sheet.

Scale	Price	Clean-up
1:1,000,000	Free	$500
1:250,000	$1,000	$2,000
1:50,000	$16,000	$32,000

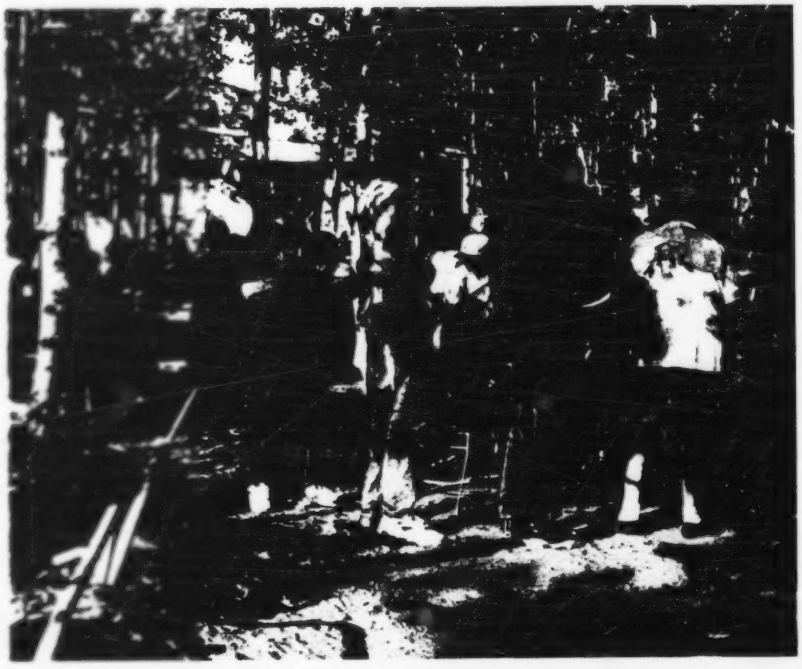
The cost of producing a land-use map depends on the scale that is needed.

Base Data

Base data is the background spatial information used in traditional knowledge projects. Base data includes elements such as hydrology and roads. Provincial and federal agencies sell paper maps suitable for traditional knowledge projects. These maps are expensive, so it is essential for the project coordinator to determine just what type of information is important.

Mapping Strategies

Each person or group interviewed should be assigned a unique numeric code. This is an efficient method to protect the confidentiality of the data. If confidentiality is protected in a different way, you may want to use a six-letter ID based on last name and first name, but be careful: in most communities there are several individuals with the same last name and initials.



Community gatherings can be a good source of contacts when planning who to interview for a traditional knowledge and land use study.

This unique ID can be used for analysis to compare the response from elders to younger people. Also, it will be possible to examine the responses of an individual over time—the changes in land use over time can be evaluated when comparing the responses of youth to those of an elder.

Automated or Manual?

Map information can be gathered using an automated process with a GPS or a manual process involving paper maps.

In automated map making, field workers using a hand-held computer and a GPS unit to pinpoint the location of a site identified by a participant. Sometimes the items are highlighted on a map and the interviewer later visits the sites to obtain the coordinates; sometimes the interview is performed on a journey and coordinates are recorded as sites are being visited. The GPS unit generates the latitude and longitude coordinates of the item. A code is used to identify the item (hunting/moose, for example).

This information is stored in a database that can be later downloaded into a GIS to generate draft traditional knowledge maps. These draft maps may be displayed to the community for further input and verification. Additional changes and deletions can be made during this consultation process. These changes are entered into the GIS and then incorporated into the final map.

Validating Traditional Land Use Sites

The interviews provide the technical phase of the process of collecting traditional knowledge, but this data should be able to stand up to close scrutiny. The positive reputation and known credibility of the person being interviewed is a great start to the collection and validation of data. This information is further validated when the same information is repeated during several interviews. Three to six repeated accounts of the same information, from different people, is a reasonable standard to validate data.

Community Mapping Sessions

Another way to validate information is through community mapping sessions. When a group of people gather around a set of maps with sites marked on them they can review the accuracy of the information, as confirmation is made by more than one person. These meetings also help to jog people's memories, especially about times, places, and events. Everyone involved should be invited and encouraged to attend these meetings. Transportation should be made available to those who want to attend.

These sessions can be used to start the interview process, and then be scheduled throughout the project to stimulate interest and validate sites. Community members who have not been interviewed can review the maps and critically analyze the data or offer suggestions for additions, deletions, or changes.

Field Checking

To get physical evidence of the location and description of a site, one or more people need to visit it. This can be done in a variety of ways, including by helicopter, boat, all-terrain vehicles, snowmobile or vehicle, on foot or by horseback. Identify all the sites that are difficult to visit on the ground and would best be visited by helicopter.

Preparing for these trips before going out to the site, especially if travelling by helicopter, is important because time is very expensive. Devise a flight plan on a map with all the sites that need to be checked. If sites are readily accessible on the ground, then paying community members to check the sites will keep the costs down and funds from the project within the community. If time is a consideration, you may need to use the quickest means of transportation available.

Figure 4: **GPS Comment Record**

Project

Date

Position

Name or number:

Route # Map Code

Comment:

Latitude °N

Latitude °W

Altitude (m)

# of Satellites (4 to 12)

Position Average (+ -)
(m)

Note Pad

GPS Data Record

The form is an on-site **backup** to information recorded on the GPS Instrument.

- Check for # of waypoints on your instrument.
- Garmin GPSXL 12 has 500 waypoint capacity (001-500).

- **Position numbers 001-500** are changeable to a name/symbol. It is an X-reference to the map code (limit: six characters in GPS).
- **Map code** identifies (by code) Traditional Land Use sites, i.e., burial site, cabin site, saltlick.
- **Route #** may identify a map region of a study area.
- **Comment** is GPS userselected. It enhances site identification, e.g., the name of the person who identified a structure for you.

Map Size

1:50,000

1.27 in. (3.2258 cm) = 1 mile (1.61 km)

1:250,000

.25 in. (6.35 cm) = 1 mile (1.61 km)

Usually, field checks are best done when the ground is not covered with snow or foliage. However, some trails are travelled only when the ground is frozen, and may need to be validated in the winter. When visiting a site such as a grave, field crew should take photographs and make notes about the site and how to find it. You may also want to identify it with some type of flagging, or you may not want to make it readily identifiable to others.

Global positioning systems have been used in recent years to obtain and record a more accurate location. This technique involves the use of a GPS unit that usually fits in the palm of a hand or can be built into a machine such as a helicopter or vehicle. The field crew can use a GPS to accurately record the location of traditional sites on the ground, usually within 10 metres. It is also a good idea to record the information on paper in case something happens to the GPS unit. Figure 4 (opposite) outlines a suggested form to record this information.

This part of the project is generally one of the most expensive tasks. But validation of the sites is important to protect these sites from destruction. Government and industry are now looking for ways to protect these sites. There can be reluctance to protect sites if they have not been visited or validated.

Many companies developing natural resources in a traditional area are willing to pay elders or other people to identify and check the sites before the company proceeds with the development. This process has helped to protect many sites from destruction. Some sites, however, may be missed, as not all members of the community know where all the sites are. That is one of the reasons why these studies are so important.

Managing Your Information

Publishing Options

Some documents have been produced by commercial publishers and can be bought in bookstores; others have been distributed only by the community. The books vary in size, type of paper, layout, and type of information presented. The amount of money available and the purpose of the document will determine the type, length, and number of copies that should be published. An 8 1/2 x 11 inch format is easily reproduced in your own office and will sit well on a bookshelf. A coffee table book (12 x 10 inch) will cost more to produce and be harder to store. Coloured pictures and better quality paper will also add to the cost. The size and location of the maps can also affect the price and size of the book.

Try to get copies of some completed traditional knowledge and land use reports to help you decide the appropriate format of the document.

Many commercial publishing companies are eager to publish these types of books, but going this route could influence the flexibility of getting extra copies, distribution, copyrights, as well as the profits from the book.

You may also consider publishing this document yourself. Local publishing companies or institutions may be willing to assist you. Make sure you check around to get the best price. If a GIS has been set up in your office, along with a desktop publishing program, these programs could also be used to produce the maps and text of the report. A combination of some glossy prints and photocopies could also work. A community could order a specific number of glossy reports for gifts, then reproduce the rest of the copies themselves.

Intellectual Property Rights

By definition, intellectual property rights are the legal means to protect the inventions of individuals, groups, or companies for a specific amount of time. A copyright prevents others from copying, selling, or importing a product without permission.

In the past, some individuals have compiled and published information on traditional knowledge from a community without its consent or without giving the community the copyright to the information. In these cases, not only has the community lost any royalties, but also the rights to its own information. It is important to understand the issues related to copyright when publishing a book containing traditional knowledge.

Once your community has completed its document, they can apply to the federal government for the copyrights. This means that the community is the owner of this information and has the right to copy this document. You can also give someone else permission to copy this information under certain conditions. Copyrights can also protect other types of information collected during the study including pamphlets, poems, stories, films, videos, music or lyrics, artwork, maps, photography, or recordings. There will be a fee to register the document.

To get more information on copyrights you can get A Guide to Copyrights from the Canadian Intellectual Property Office (CIPO), Industry Canada, 50 Victoria Street Place due Portage, Phase 1, Hull, Quebec. K1A 0C9. Telephone: 819-997-1725, Fax: 819-953-6977, web site http://cipo.gc.ca. The guide covers such topics as infringement, authorship, ownership, benefits, and royalties.

Winding up the Project

Consider ending the project with a celebration. Most communities plan a feast, during which sponsors, community leaders, and participants are recognized for their contribution and participation. Usually, a complimentary copy of the completed document is given to each organization or person who has participated in the project in some way.

Johnathan Giroux (left) and J. R. Giroux (Economic Development and Employment Services), of Driftpile Metis Settlement, going over aerial photographs.

Putting Your Data to work

Land Issues

Once the traditional land use study has been completed and, if possible, stored in a GIS, this information can be used to benefit and resolve land issues related to your community. These could include issues related to timber harvesting, fishing, mining, oil and gas activities, hunting, conservation, and recreation. Many of these activities affect the traditional sites of aboriginal communities. A community can also use this information for land claims and treaty land entitlement negotiations.

Some communities have developed a land management policy to establish priorities and take a position on traditional sites and the economic activities in their traditional area. This position is used to build relationships with other organizations and to make a case for their involvement in the planning, management, and development of natural resources.

Being involved with local or regional management organizations will ensure that the interests of a community are continually considered with other land use activities. In most cases, organizations are eager to protect these sites, but other times there may be a conflict. Aboriginal knowledge and involvement in the planning and management of the land is critical to the conservation and preservation of traditional sites.

In some cases, industry and government may only want to know the location of these sites to avoid conflict, but this is not always sufficient to protect a site. The activities occurring around a site can also affect it. There is also the issue of the cumulative effect of natural resource activities affecting a community's lifestyle and the ability to hunt, fish, trap and gather, which is a much broader planning issue, as well as a legal one. To address these issues, aboriginal communities have developed partnerships with governments and industry through memoranda of understanding, and they are actively pursuing ways to address many of these issues.

Educational Uses

In some communities, traditional knowledge and land use documents have become part of the school curriculum. Teaching materials and programs can also be developed out of a traditional land use document. For example, programs have been established that give the students an opportunity to learn and practice many of the traditional activities of their community. Informal programs can also be developed

for adults or youth. Cultural awareness programs have also been developed to educate resource developers, government employees, and the public.

Other Applications

Traditional knowledge and land use has been used for a variety of other reasons, including Environmental Impact Assessments, pre- and post-mine planning and operations, forestry planning and operations, wildlife management, environmental management on reserves, national and provincial park management and conservation, ecotourism, cultural centres, and agriculture practices. Although the combination of scientific and traditional knowledge has presented some difficulties, it has also brought many rewards as well. It is obvious that both systems have knowledge of the natural world that will benefit both the land and the people.

Access to Traditional Data by Partners

If your community decides to accept funding from industry or government to complete your study, you can expect these organizations to want access to the information. They usually want to use this information to avoid land use conflicts. Some of this information is very sensitive, however, and your community may not be willing to release it unconditionally. Areas are sensitive because they may be used for ceremonies, or people are concerned about theft. In many ways, this is similar to confidential information held by oil and gas companies or any other organizations.

First, the community needs to identify what information is highly sensitive. They may want to devise a sensitivity rating. Next, they will want to know how confidential their information will be, if it is given to another organization. In most cases, these organizations only want the site locations, not the knowledge that may go with the site. They will usually put this information into a GIS. Confidentiality can be addressed through an agreement that clearly gives copyright of the information to the community and does not allow the other organization to distribute the information.

Sensitive sites do not have to be specifically identified. Larger circles can be drawn, and sites can receive a sensitivity rating. Some maps have circles with a phone number and contact person. The company must contact the community before proceeding with development in that area.

If the community has the information in a GIS, other organizations can come to their office, outline their proposed development, and have the community identify any sites that may be located in that area. If an organization did not contribute to the study, some communities have charged an administration fee to cover the cost of accessing the information.

11 Conclusion

A traditional land use study is a costly venture for a community to consider, but the result is a valuable community-owned asset. As traditions wane with the passing of elders, and communities struggle to try to understand their identity in the absence of elders, the maps and documents resulting from a traditional land use study will become the only real link with a community's past and its traditions of everyday life.

This link must be recognized as an important asset that can influence a community's future while providing the essential links to its past.

Appendix: Aseniwuche Winewak Nation TLUS Terms of Reference

Aseniwuche Winewak Nation Traditional Land Use Study

Table of Contents

1 – Introduction – 44

1.1 General – 44
1.2 Purpose of Study – 44
1.3 The Traditional Area of the AWN – 44

2.0 – Methodology – 45

2.1 Study Objectives – 45
2.2 Products – 45
2.3 Proprietary/Exclusive Rights – 45
2.4 Study Area – 45
2.5 The Communities – 46
2.6 Community Preparation and Participation – 46
2.7 Data to be Collected – 46
2.8 Interviews and Mapping – 47
2.9 Mapping Base – 47
2.10 Map Evaluation and Validation – 47
2.11 Analysis of Study Results – 47
2.12 Study Team – 48

3.0 – Administration/Travel Plan – 49

4.0 – Budget – 49

4.1 Project Budget – 49
4.2 Funding – 50

5.0 – References – 50

1. Introduction

1.1 – General

The Aseniwuche Winewak Nation (AWN) or Rocky Mountain People, are Aboriginal people who have long resided in the Rocky Mountain Foothills. They live in six settlements collectively referred to as the Grande Cache Cooperative and Enterprises, located in the Grande Cache area. The establishment of the town of Grande Cache and surrounding developments has greatly impacted their traditional activities. They now find it necessary to carry out a comprehensive traditional land use study in part of their traditional area, in order to preserve their knowledge and use of this area for future generations. Also, this information will allow the AWN to consult with industry and government in the planning and management of resource developments, which impact their traditional use of the area.

1.2 – Purpose of Study

Each Elder and community member has a wealth of traditional knowledge they can transfer to the younger generation. This knowledge can provide valuable cultural, ecological and economic information. The AWN considers the collection of this information important to the present and future well-being of their membership for the following reasons:

1) The traditional land use information and maps will allow the AWN to consult with industry and government regarding the impact of resource activities on their traditional activities and sites. It is the hope of the AWN that this consultation process be facilitated through Cooperative Management Agreements, whenever possible.
2) The AWN wish to develop a comprehensive, computer-based, Geographic Information System (GIS) to incorporate present and future land use mapping information, to overlay and compare other types of resource inventories and developmental activities, enabling them to effectively assess the impact of these activities on their traditional use areas and to model possible alternative patterns of development.
3) The ownership and distribution of the traditional land use information must lie with the AWN membership, in order to protect the location of sites and associated information. However, funding partners will have conditional access to the land use information.
4) A Traditional Land Use Study can provide many educational, cultural and economic opportunities and benefits to the community, such as partnership agreements, ecotourism and educational programs. This study will allow the AWN to explore and implement these opportunities.

1.3 – The Traditional Area of the AWN

The traditional area of the AWN includes parts of British Columbia and Alberta. However, for purposes of this study, only a portion of this area will be inventoried. This study area reflects a concentration of traditional uses, including hunting, fishing, trapping, gathering, graveyard, and ceremonial areas. These activities have and still continue to provide considerable economic and cultural value to the AWN - value which can be largely invisible to resource planners, developers, managers and politicians.

2. Methodology

The Aseniwuche Winewak Nation Traditional Land Use Study is primarily following the methodology outlined in "Mapping How We Use Our Land" (Robinson, Garvin and Hodgson 1994). It identifies a research process which involves training community members to gather and process traditional land use information. It is also a process which gives the community the exclusive rights and management to the material collected. The following components to the study are outlined below.

2.1 – Study Objectives

1) To carry out a comprehensive Traditional Land Use Study in part of the AWN traditional area, which will result in the production of a report, analysis of traditional use and maps of different traditional uses.
2) The AWN will develop a comprehensive GIS capability, which will store and analyse digital map data and associated information collected from the Traditional Land Use Study. Members of the AWN will be trained to operate and update this system.

2.2 – Products

The AWN will receive the following project deliverables:

1) A Traditional Land Use Study report, which includes the following
   - hardcopy mylar maps indicating traditional land use locations
   - an accompanying report on a computer disk
   - two camera ready unbound copies of the report
   - the report, with a table of contents
   - all materials used and collected during the study
2) The study results in a GIS format determined by the AWN, combining both site and attribute information collected from the interviews.

2.3 – Proprietary/Exclusive Rights

Due to the sensitivity of this information, the Aseniwuche Winewak Nation will have the proprietary or exclusive rights to use or distribute the information from this study. They will also be responsible for the distribution of reports, maps or digital information which may subsequently be derived from this study and for the storage of the raw field data developed during the study process (including mylars, notes, books, audio and video recordings, etc.). The AWN will negotiate understandings and agreements regarding the release of this information to potential resource users, or other entities or governments.

2.4 – Study Area

The study area for this project is defined as

1) That area including areas which have been used, occupied or are now presently inhabited by members of the AWN. The area is approximately 39,000 km^2 in size.

2) Particular emphasis will be placed upon those areas indicated in Alberta and surrounding the six Cooperatives and Enterprises.

2.5 – The Communities

This Traditional Land Use Study will be carried out within the membership of the six communities of the AWN. These communities are

1) Muskeg-SeePee Cooperative
2) Susa Creek Cooperative
3) Grande Cache Lake (Kamisak) Enterprise
4) Victor Lake Cooperative
5) Joachim Enterprise
6) Wanyandie Flats Cooperative (on two separate land locations)

2.6 – Community Preparation and Participation

Prior to commencing the interviews and mapping, consultants and AWN Executive will explain the mapping project through community meetings. These meetings will also provide an opportunity for the consultants and researchers to make any advance arrangements for the project. As part of the study preparations, the AWN will identify and retain two Community Interviewers or Research Staff, who will be trained by the consultant to carry out the required interviews and mapping. The consultant will also include in the training sessions staff from government and industry to assist them in future interpretation of the study results.

2.7 – Data to be Collected

Traditional land use information will be collected through written and audio/visual recordings of the life experience of an individual member, including male and female, young and old. The study process captures, through interviews and maps, the types of land uses, when they occurred, sites and locations of importance. At a minimum, this research typically incorporates the following information:

- Big game - species, habitat and harvesting areas
- Birds - species, habitat and harvesting areas
- Fish - species, habitat and harvesting areas
- Fur bearing animals - species, habitat and harvesting areas
- Significant and sacred wildlife - species and habitat
- Traplines
- Plant foods and medicine - species and harvesting sites
- Trees, shrubs and plants - species and harvesting sites
- Camps, trails and cabins
- Traditional place names
- Graveyards, burial sites, ceremonial, sacred, special areas
- Hay fields, pastures, mineral licks, springs

Audio and video tapes from the individual interviews will be translated to English and collated with field notes and other external data as part of the process to develop the map

database and associated attribute data. For example, researchers will seek attribute data for principle ungulate harvesting areas and sites which will identify species, age, weight, sex, health (including infestations), identify hunters, family and community harvest distribution information, method of harvest, frequency of use of hunting areas, time (season) of harvest and other information. Similar information will be collected for fishing, trapping, and the harvesting of trees and plants. A questionnaire will be developed by the consultant, the AWN Executive, and the Community researchers, for the interview process, to ensure that non-mapped information will be recorded.

2.8 – Interviews and Mapping

As mentioned earlier, a series of questions will be developed for the interviews.
Map overlays will be used for the interviews. Labels will be developed for the overlays, with space provided for the name of interviewee, community, date of birth, place of birth, date of interview, interviewer's name, code for audio/video recordings, the colour-coding system and specifically shaped/coloured marks which indicate the type of land use activities or site.

2.9 – Mapping Base

A preliminary map base of 1:250,000 will be used for the study report and interviews, along with 1:50,000 scale base maps being used to identify detailed site locations. It is noted that forestry companies often use 1:15,000 scale maps for forestry planning and for impact assessments; consequently, there may be a need to transfer this information to a larger scale. Aerial and other photographs will also be used if necessary, to act as a memory aid and to assist with the mapping process.

2.10 – Map Evaluation and Validation

The AWN and project participants will require the highest level of confidence in the accuracy of the study results, findings and analysis. The process of evaluation will be

- Traditional land use maps will be continuously reviewed by community Elders and representatives for completeness and accuracy.
- Determination of accuracy during the map digitizing process by transposing each map on to the other maps and looking at the consistency of the lines or marks.
- Evaluation and selective "ground-truthing" using a Global Positioning System (GPS) is anticipated to be an ongoing aspect of the mapping activities to verify study information. This process will also identify where necessary data is non-existent, or requires updating and must be obtained.
- Additional detailed mapping at 1:50,000 and 1:15,000 scale will occur as required.

2.11 – Analysis of Study Results

The traditional land use information will primarily be used in consultation with government and industry, for land use planning and management purposes. It is important to analyse the study results to provide additional details regarding such matters as data accuracy, frequency, duration, seasonality, productivity and critical habitats/sites. This

analysis will be particularly important for planning of developmental activities.
The project team will propose a plan to determine the method and results of the analysis.

2.12 – Study Team

The AWN Traditional Land Use Study Team will consist of the following members:

Executive Management

The AWN Executive Management will directly serve as the contact point for project staff, other partners and the communities.

Advisory Team

The Advisory Team will be made up of the AWN Executive, Consultants, Government and Industry representatives.

Project Coordinator

The Project Coordinator will be responsible for the completion of the study and the financial management of the funds. They will also assist in the training of interviewers, coordination of study results, oversee compilation and filing of all project material. The Coordinator will also serve as liaison between the AWN leadership and the consultants during the project.

Community Interviewers/Researchers (2)

The Community Interviewers will be primarily responsible for the interviews and the collection of traditional knowledge and land use maps.

Interpreter

The proper understanding and interpretation of both questions and responses is crucial to the success of the project. Interpretation skills may be found in the individual retained to fill any one of the other skill/activity requirements, such as the Community Interviewer.

Consultants

This study requires the consultants to

1. Provide training and technical support.
2. Provide general assistance to the activities and planning for the project.
3. Develop and carry out
   a) the development of the study interview process and protocol;
   b) process mylars, notes and recordings for incorporation into a GIS;
   c) compile, review and evaluate the results of the field work and other study activities;
   d) complete analysis of study results; and
   e) prepare study end products.
4. Provide technical assistance in computer-based mapping technologies, particularly related to the potential installation of a GIS.

A single individual may execute more than one of the required functions.

3.0 Administration/Travel Plan

The Project base will be located at the AWN offices at 10022 - 99 Street, Box 1808, Grande Cache, Alberta, T0E 0Y0, unless otherwise indicated by the AWN. Movement from one community to the other will be primarily by vehicle. A helicopter may be required to validate some of the map sites. Every effort will be made to integrate the activities of the participants and the advisors to ensure the effective and efficient collection and production of the land use information. Since the size of the study area is large, this will be vital to the success of the project.

4.0 Budget

4.1 – Project Budget

Phase I – Training and Preparation
Project Co-ordinator — $15,000
Training Workshop — 5,000
Benefits — $2,500
Administration/Clerical/Logistics, Workshop, Meetings — $7,500
Materials and Equipment — $2,500
Mapping Supplies — $2,500

Phase II – Interviews
Community Research Staff - Interviews and Data Collection — $5,000
Travel — $4,000
Elder Honoraria — $1000

Phase III – Map Production and Verification
Map Verification (Using GPS) — $10,000
Map Production (Using Symbols) — $5,000
Digitizing of Maps and Sites — $5,000

Phase IV – Report Writing and Analysis
Data Analysis — $5,000
Report Writing — $15,000

Phase VI – Final Report and Map Production
Report and Map Production, Publishing Costs — $15,000
Phase V - GIS Training and Map Production
GIS Training — $5,000
GIS programming, map and attribute production — $45,000

Project costs	***$150,000***
GST	***$10,500***
Total project costs	***$160,500***